

What is claimed is:

1. A connection device comprising:

a plurality of input devices adapted to be connected to at least two signal sources;

an output switch adapted to be connected to an electrical device; and

a device electrically connected between said input devices and said switch, said device operative to cause said switch to change from a first state to a second state when there is a signal present at each of said input terminals.

2. The connection device according to claim 1 wherein said device

connected between said input device and said switch includes an AND logic circuit.

3. The connection device according to claim 2 wherein each of said input

device includes a rectifier bridge circuit connected between the corresponding signal source and said AND logic circuit.

4. The connection device according to claim 3 wherein said AND logic

circuit includes a plurality of optoisolator dual transistors connected in series, said transistors having inputs connected to the outputs of said rectifier bridge circuits such that a current flows through said optoisolator dual transistors only when an input signal is present for all of said rectifier bridge circuits.

5. The connection device according to claim 4 wherein said output switch

is connected to said optoisolator dual transistors and is operable only when said current is flowing through said optoisolator dual transistors.

6. The connection device according to claim 5 wherein said output switch

includes a PNP electronic switching device that is changed from a non-conducting state to a conducting state when said current is flowing through said optoisolator dual transistors.

7. The connection device according to claim 6 wherein said PNP electronic

switching device is a P-channel field effect transistor.

8. The connection device according to claim 5 wherein said output switch includes a NPN electronic switching device that is changed from a non-conducting state to a conducting state when said current is flowing through said optoisolator dual transistors.

9. The connection device according to claim 8 wherein said NPN electronic switching device is a N-channel field effect transistor.

10. The connection device according to claim 9 wherein said NPN field effect transistor is connected to a relay coil and is operative to actuate said relay when said NPN field effect transistor is in its conducting state.

11. The connection device according to claim 10 further including an input status light emitting diode connected to each of the bridge rectifier inputs, the input status diode being illuminated when an input signal is present.

12. The connection device according to claim 11 further including a logic status light emitting diode connected between two of said optoisolator dual transistors, said logic status light emitting diode being illuminated when said current is flowing through said optoisolator dual transistors.

13. The connection device according to claim 12 further including a separate power supply and ground for said input devices such that said input signals are totally isolated from said output signals.

14. The connection device according to claim 12 wherein said input signals can be one of current source, current sink and dry contact signals.

15. The connection device according to claim 5 wherein said output device is compatible with one of current source, current sink and dry contact signals.

16. A connection device comprising:
a plurality of input terminals adapted to be connected to at least two signal
sources; and

5 a device connected to said input terminals that is operative to generate and
output signal that is a function of a signal appearing at any one of said input terminals.

17. The connection device according to claim 16 further including a rectifier
bridge circuit having input terminals connected to each of said input terminals, said
10 rectifier circuit having a input status light emitting diode connected to its output
terminals, said input status light emitting diode being illuminated when an input signal
is present.

18. A connection device comprising:
15 a plurality of input devices adapted to be connected to at least two signal
sources, each of said input devices capable to receive one of a current source, current
sink and dry contact signals;

an plurality of output devices adapted to be connected to an electrical device,
each of said output devices being capable to be connected to one of a current source,
20 current sink and dry contact signals; and

an interface device electrically connected between said input and output
devices, said interface device operative to cause said output devices to change from a
first state to a second state when there is a signal present at each of said input devices.

19. The connection device according to claim 18 wherein said input device
includes a rectifier bridge circuit.

20. The connection device according to claim 19 wherein said isolation
device includes an optoisolator dual transistor.

21. The connection device according to claim 20 wherein said optoisolator
transistors are connected in series to provide an AND logic circuit.

22. The connection device according to claim 21 wherein each of said output devices includes one of a P-channel field effect transistor, an N-channel field effect transistor and a relay whereby both said input and output devices are compatible with current source, current sink and dry contact signals.

23. The connection device according to claim 22 further including a first set of terminals adapted to be connected to a first power supply for supplying power to said input devices and a second set of terminals adapted to be connected to a second power supply for supplying power to said output devices whereby said input devices are electrically isolated from said output devices.